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The Leipzig Connection

A Report on the Origins and Growth of Educational Psychology

By Lance J. Klass, in collaboration with Paolo Lionni



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COVER: *Experimental psychologist Wilhelm Wundt (center) and associates.*

Preface

In the final years of the last century, a great transformation began in American education. By the end of the first world war, Americans would increasingly notice a change in the way their children were being educated. In the succeeding decades, the same schools that once nurtured the American dream would become infested with drugs and crime, and high schools would be graduating students who could barely read, spell, or do simple arithmetic.

This report attempts to detail the origins of a national metamorphosis.

Introduction

Just outside of Portland, Oregon, on the road down to the coast, there's a small roadside restaurant which is known locally for the quality of its home-made pie. It's a pleasant place to eat, and my wife and I often stop there for breakfast. The restaurant is located in a wealthy farming area, rich with orchards, cattle, and wheatfields. The town is compact and tidy, with a modern, well-equipped school, adequate shops, and new houses springing up in the surrounding hills. A typical semi-rural community, distant enough from the city for its residents to enjoy the fresh air of the country, yet close enough to attract an increasing number of city residents fleeing the noises and distractions of the inner city.

I've been in other towns much like this: in the Virginia hills outside Washington, D.C.; the small towns on the far west side of Chicago; up the coastal highway from Boston; in any one of a thousand towns in this country which are too small to be considered metropolitan areas, but too large for one gas pump.

It could have been anywhere in what's come to be called "Middle America." After finishing the meal, I walked up to the counter to pay the bill. The girl behind the counter was in her late 20's, attractive, and noticeably flustered when I handed her a \$10 bill. She looked at the check, rang it up on the cash register, then stared at the register as she realized that she had charged us 15 cents too much for the breakfasts.

"What's 15 cents from \$4.35?," she asked. I told her it was \$4.20. She said, "Oh," and put my bill in the drawer. With change in her hand, she began to pay me the balance, giving me a dime less than was due. When I pointed out the error she blushed, and gave me the other dime, saying, "I hope that's right." It was.

I used to be more oblivious of occurrences like that. I had had similar experiences with people who couldn't make simple change, or

who couldn't read a sign or decipher a bus schedule. I had read, as have all of us, about declining educational standards and worsened conditions in our schools, about students graduating from school unable to read or write well or to do simple math. Of course I had met many individuals who were scarcely literate—it was part of life in America: some people are intelligent, and some aren't. As an educator and researcher, I shared that attitude to a great extent, even though I had been born into a family which would have considered such an event unthinkable for anyone who had spent even a minimal period of time in school. My father had grown up in New York City, going to the public schools and reaching a high level of literacy by the time he had graduated high school. My mother had grown up in a rural town in upstate New York and had often told me stories of the town in which she lived and of the schools she had gone to. Often, she would show me her library, or read to me from her grade school texts: the poetry of Shelley, Byron, Coleridge, Stevenson, Pope. Great works of literature. Latin texts. Arithmetic beyond my comprehension. Spellers with words I had never heard. Someday, I told myself, I would read those books and learn what they had to teach me. I would become as literate and well-read as my mother. I would know great poetry by heart. I would speak Latin. I would have read all the important works of literature. I would be a high school graduate.

It never happened that way. And I never understood why.

Of course, I had graduated high school, and gone on to college. I had a college degree and a graduate degree, and although I couldn't really do much with what I had learned, I felt I was educated. Until I realized that I was judging my own level of education by contrasting it with the more recent products of our schools. Were I to contrast my own education with that received by the previous generation, I could justifiably feel quite uneducated.

What had happened? Obviously, there had been a change. Somewhere in our history the schools had lost the ability to routinely educate children and produce uniformly good results. I decided to track down the evidence of change and locate, if possible, the specific changes that had occurred. Perhaps if they were located we could do something about the disease rather than the symptoms.

I didn't really know where to start in the research, until a friend showed me a short transcript from a 1917 *Congressional Record*. The debate centered around what *The New York Times* called a "radical and dangerous" experiment in education which involved Rockefeller money and a Columbia University project called the Lincoln School. Several congressmen were up in arms about a group calling itself the General

Education Board and its potential for controlling and changing education in our country without anyone else's having any say in the matter. With an associate, I began to research the General Education Board, who it consisted of, what it did, where it got its money, and how it worked.

We found the records of a great controversy in American education, and traced the development of a new philosophy of education. Two men in particular seemed central: the psychologists John Dewey and Edward Lee Thorndike. Who inspired their views on education? Who taught them?

My research took me into the world of the fabulously wealthy, into the sources of psychological theory and practice, into the schools of education and the laboratories of old Prussia. It ranged from the study of the behavior of rats and children to the private conferences of industrial giants, from Lexington, Kentucky to Leipzig, Germany, from the writings of Jefferson to the works of Karl Marx.

The trail I was following continually corresponded to the growth and development of experimental psychology. In order to understand what happened in American education, it became essential to understand this new subject and the people who developed it—from the beginning.

The Leipzig Connection

Wilhelm Maximilian Wundt was born in 1832 in a small town in southern Germany.¹ Wundt entered the university at Tübingen when he was 19, transferred to Heidelberg after half a year, and graduated as a medical doctor from that university in 1856. He stayed on at Heidelberg for the next seventeen years, working first as a professor's assistant, and later as a professor himself, in the field of psychology. Psychology, at that time, meant simply the study (ology) of the soul (psyche), or mind.²

1. Perhaps the best descriptive biography of Wundt is contained in Professor Edwin G. Boring's *A History of Experimental Psychology*, 2nd ed. (New York: Appleton-Century-Crofts, Inc., 1929). See, also, Schultz, Duane P., *A History of Modern Psychology* (New York: Academic Press, 1969), and Murphy, Gardner and Joseph K. Kovach, *Historical Introduction to Modern Psychology*, 6th ed. (New York: Harcourt Brace, 1972), for excellent overviews of the development of experimental psychology.

2. See, for example, *A Standard Dictionary of the English Language* (New York: Funk & Wagnalls Co., 1895), which notes the intrusion of the new German definition of the word in a reference note inserted by Wundt's student James Mark Baldwin.

In 1874, Wundt left Heidelberg to take a position as professor of philosophy at Zurich. He stayed there for only a year, and then accepted a chair in philosophy at the University of Leipzig, in Germany. He was to remain at Leipzig for the rest of his academic career, eventually being appointed rector of the university. Wundt died in 1920.

Those are the man's vital statistics. What they omit is that Wundt was the founder of experimental psychology and the force behind its dissemination throughout the western world.

To Wundt, a thing didn't make sense and needn't be pursued if it could not be measured, quantified, and scientifically demonstrated. Seeing no way to do this with the human soul, he side-stepped the question and proposed that psychology concern itself solely with experience, and not with metaphysical issues. As Wundt put it:

... it truly appears to be a useless waste of energy to keep returning to such aimless discussions about the nature of the psyche, which were in vogue for a while, and practically still are, instead, rather, of applying one's energies where they will produce real results.³

In altering the traditional definition of psychology, and in redesigning its scope and functions, Wundt was attempting to place his new "science" within the mainstream of German scientism. Germany was the center of civilization: its scientific and technological advances were well-known. The Germans excelled in the application of scientific terms and procedures to previously non-scientific areas. Hegel, at the University of Berlin, had attempted to make history a scientific study; he became Germany's leading philosopher, emulated by a generation of students. Karl Marx injected Hegel's theories with economics and sociology, developing a "philosophy" of "dialectical materialism." Herbart and Fechner applied mathematical principles to learning⁴; Muller and Helmholtz grafted physiology to behavior; Fritsch and Hitzig applied electrical stimulation to the brain to determine the relationship of brain functions to behavior. Throughout the revolutions and revolts of 1848 across Europe, the rise of the Socialist Internationals, and the forced unification

3. Shipley, Thorne, ed., *Classics in Psychology* (New York: Philosophical Library, 1961), 52-3, extracted from Wundt, Wilhelm, *Contributions to the Theory of Sensory Perception*, trans. from *Beitrage zur Theorie der Sinneswahrnehmung* (Leipzig: C.F. Winter, 1862).

4. Herbart and Fechner are perhaps the direct lineal antecedents of Wundt in the area of education. See Boring, *op. cit.*, 250-260 and 275-296. Herbart's psychology, as it applies in particular to education, is lucidly described in Paul Monroe's *A Brief Course in the History of Education* (New York: Macmillan, 1927). See also Dunkel, Harold B., *Herbart & Education* (New York: Random House, 1969) and DeGarmo, Charles, *Herbart and the Herbartians* (New York, Charles Scribner's Sons, 1912), for good discussions of the impact of Herbart's views on education.

of the new Germany by Otto von Bismarck, Germany was a flourishing center of culture and the sciences, each of its universities a magnet for the more ambitious intellectual youth of Europe and the United States. Leipzig was no exception: one of its principal attractions was Wundt.

Soon after his arrival at Leipzig in 1875, Wundt had established the world's first psychological laboratory. Initially small and primitive, it soon increased to eleven rooms. He supplemented his new laboratory with a journal, *Philosophical Studies*, which became the official organ of both the new laboratory and the newly redefined "science" of psychology. Wundt stated his overall intention in clear terms:

The work which I here present to the public is an attempt to mark out a new domain of science.⁵

What did Wundt do? His basic approach was to gather data concerning the physiological functions and responses of the individual in order to clarify how the individual experienced feelings and sensations. Man's perceptions and experiences were what mattered, and they could best be understood from the viewpoint of quantifiable physiological reactions. Wundt believed that reactions began with stimulation, followed by (1) perception, in which the experience exists within the individual; (2) "apperception," in which the body identifies the stimulus and combines it with other stimuli, and (3) an act of will which results in (4) a reaction to the stimulus. What was will? For Wundt, as it developed, will was the direct result of the combination of perceived stimuli, not the independent intention of a causative individual.⁶

Wundt made two major contributions to the demise of education in the West. The first was theoretical. Wundt believed that man is devoid of spirit and self-determinism. He set out to prove that man is the summation of his experiences, of the stimuli which intrude upon his consciousness and unconsciousness. In directing the work of his students, he focused their energies on minute examinations of sensory perceptions, in an attempt to break down and quantify every aspect of action and reaction.

5. Schultz, *op. cit.*, 45.

6. Here, Wundt was condensing and organizing the work of his contemporaries, with primary emphasis on the works of Herbart. Psychologist R.I. Watson, in *The Great Psychologists* (Philadelphia: Lippincott, 1963), p. 257, describes Wundt as a:

great synthesizer of research findings, both of the work that preceded him and of that carried on by his students. Wundt's forte was not luminous ideas lighting upon the dark corners or giving us a new dazzling perspective on the old picture. Rather, he worked over a thousand details, cleaning here, repairing there, filling a crack here, so that psychology leaving his hands was an improved, more coherent picture, but still a familiar one.

What determines the difference in reaction time to stimuli between one individual and another? Why do some individuals combine stimuli differently than do others? What are the "laws" of the associations that can be formed, the similarities or differences, between words? Wundt and his students regarded such questions as highly significant.⁷

As a physiologist, Wundt established the new psychology as the study of the brain and the central nervous system. From Wundt's work, it was only a short step to the later redefinition of the meaning of education. Originally, education meant the drawing out of the innate talents and abilities of the individual.⁸ To the experimental psychologist, education became the process of giving "meaningful" experiences to the individual so as to ensure correct reactions:

... learning is the result of modifiability in the paths of neural conduction. Explanations of even such forms of learning as abstraction and generalization demand of the neurones only growth, excitability, conductivity, and modifiability. The mind is the connection-system of man; and learning is the process of connecting. The situation-response formula is adequate to cover learning of any sort, and the really influential factors in learning are readiness of the neurones, sequence in time, belongingness, and satisfying consequences.⁹

If one assumes that there is nothing there to begin with besides a body and brain and nervous system, then one must try to educate by giving sensations to that nervous system. Through these experiences, the individual will learn, and when given the correct stimulus, will give the correct response. Thus the child is not, for example, capable of volitional control over his actions, or of deciding whether he will act or not act in a certain way: his actions are preconditioned and out of his control, because he is a stimulus-response mechanism. He is his reactions. Wundt's thesis laid the philosophical basis for the principles of conditioning later developed by Pavlov and the American behavioral psychologists; for lobotomies and electro-convulsive therapy; for schools oriented more toward the socialization of the child than toward the development of intellect and the continuation of culture; and for the growth of a society

7. Boring, *op. cit.*, 339-344.

8. A concept going back to the Latin root of the word, *eductus*, to bring out, lead forth, from *e*, out of, + *ducere*, lead. Hence, "to develop the faculties and powers of by teaching, instruction, or schooling," from Emery, H.G., and K.G. Brewster, *The New Century Dictionary of the English Language* (New York: Appleton-Century-Crofts, 1927).

9. Pintner, Rudolph, *et al.*, *An Outline of Educational Psychology*, rev. ed. (New York: Barnes & Noble, Inc., 1934), 79.

increasingly devoted to the satisfaction of sensory desires at the expense of responsibility and achievement.

The First Generation

Wundt's second major contribution to education's demise wasn't theoretical at all: he produced the first generation of researchers, professors, and publicists in the new psychology. This group went on to establish experimental psychology throughout Europe and the United States:

Through these students, the Leipzig Laboratory exercised an immense influence on the development of psychology. It served as the model for the many new laboratories that were developed in the latter part of the nineteenth century. The many students who flocked to Leipzig, united as they were in point of view and common purpose, constituted a school of thought in psychology.¹⁰

The list of Wundt's students reads like a *Who's Who* of European and American psychologists. In succeeding years, one could go to almost any major European or American university and study the new psychology under a student who had received his Ph.D. directly from Wundt at Leipzig.¹¹

In the United States, the young Americans who studied with Wundt had returned to found departments of psychology throughout their own country. As the first generation of Wundtian experimental psychologists in the United States, and with the prestige attached to having studied in one of the great German universities, these men found little difficulty securing positions of influence at major American universities. Each became successful to a marked degree; each trained scores, often hundreds, of Ph.D. students in psychology; each contributed to new journals, associations, and publications in the new field of study—and almost without exception, every one of them became involved in another field which lay open to the intrusion of German psychology—the field of education.

Hall and Dewey

The first of Wundt's American students to return to the United States was G. Stanley Hall. Returning from Leipzig in 1883, he went to

10. Schultz, *op. cit.*, 45.

11. Some of the more notable of Wundt's European students were Kiesow at Turin, Kirschmann at Toronto and later Leipzig, Storring at Zurich and Bonn, Kulpe and Kraepelin at Munich, Meumann at Hamburg, Marbe at Wurzburg, Lehmann at Copenhagen, Wirth and Krueger at Leipzig, Lipps at Zurich, Durr at Bern, and Lange at Tübingen. Boring, *op. cit.*, 427-9.

join the faculty of the new Johns Hopkins University, which was then being organized in Baltimore on the model of the great German universities. Hall organized the psychology laboratory at Johns Hopkins, and in 1887 established the *American Journal of Psychology*, giving the "adherents of the new psychology not only a storehouse for contributions both experimental and theoretical, but a sense of solidarity and independence."¹²

Two years later, in 1889, when Clark University was established in Worcester, Massachusetts, Hall was chosen to be its first president. In 1892 he played a leading role in founding the American Psychological Association. Hall became best known for his intensive studies of child development, which led directly to the child study movement in this country. In 1904 he published his masterwork, the two-volume *Adolescence: Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education*.¹³

Welding together experimental psychology and the education of children, Hall was also instrumental in furthering the career of an individual who was to have an unusually profound effect on the course of American education: John Dewey.

Dewey was born in Vermont, graduated from the University of Vermont, spent a few years teaching high school and then enrolled as a graduate student at Johns Hopkins University.¹⁴ He spent a year studying under Hall before receiving his doctorate in 1884, whereupon he taught for some years at the universities of Michigan and Minnesota. In 1886, Dewey published the first American textbook on the new psychology, titled *Psychology*. In late 1895 he was invited to join the faculty of the Rockefeller-endowed University of Chicago as head of the departments of philosophy, psychology, and pedagogy (teaching). That same year, the University allocated \$1,000 to establish an educational laboratory in which Dewey could apply psychological principles and experimental techniques to the study of learning. The experiment opened in January, 1896, as the Dewey School, later to become known as the Laboratory School of the University of Chicago.

12. Murphy and Kovach, *op. cit.*, 175.

13. Schultz, *op. cit.*, 175.

14. There have been many discussions of Dewey and his effects upon education in the United States. For his role in the "Chicago School" of psychology see Schultz, *op. cit.*, 124-6. See also Arthur G. Wirth's *John Dewey as Educator: His Design for Work in Education (1894-1904)*, (New York: John Wiley & Sons, Inc., 1966); Baker, Melvin, *Foundations of John Dewey's Educational Theory*, (New York: King's Crown Press, 1955); and Bernstein, Richard J., *John Dewey* (New York: Washington Square, 1966).

For Dewey, the school was a place "where his theories of education could be put into practice, tested, and scientifically evaluated."¹⁵

... Dewey ... sought to apply the doctrines of experience and experiment to everyday life and, hence, to education ... seeking via this model institution to pave the way for the "schools of the future." There he had put into actual practice three of the revolutionary beliefs he had culled from the new psychology: that to put the child in possession of his fullest talents, education should be active rather than passive; that to prepare the child for a democratic society, the school should be social rather than individualist; and that to enable the child to think creatively, experimentation rather than imitation should be encouraged.¹⁶

This was a sharp break from the traditional definition of education, and showed the influence of his studies of Hegel. In Dewey's own words:

Education consists either in the ability to use one's powers in a social direction, or else in ability to share in the experiences of others and thus widen the individual consciousness to that of the race.¹⁷ . . . The ultimate problem of all education is to coordinate the psychological and social factors. . . . The coordination demands . . . that the child be capable of expressing *himself*, but in such a way as to realize social ends.¹⁸

Dewey's intention, like Hall's, was to join psychology to education, and he managed to do so in the Dewey School, with an additional blend of Hegelian social thought and practice thrown into the mix.¹⁹

Although today Dewey's views are in practice in the great majority of American schools, before the turn of the century they represented revolutionary changes in the American system of education. Here we have the Wundtian redefinition of "education" to mean feeding experiential data to a young brain and nervous system—not the teaching of mental skills or the cultivation of intellect. Here is the abdication of

15. DePencier, Ida B., *The History of the Laboratory Schools, The University of Chicago, 1896-1965* (Chicago: Quadrangle Books, 1967), 13. Another pro-Dewey account, more oriented to Dewey's philosophy of education, is G. Max Wingo's *The Philosophy of American Education* (Lexington: D.C. Heath, 1965).

16. Cremin, Lawrence A., David A. Shannon, and Mary Evelyn Townsend, *A History of Teachers College Columbia University* (New York: Columbia University Press, 1954), 45. Although a strongly flattering "official" history of Teachers College, this book is nonetheless a storehouse of data pertinent to the invasion of psychology into American education.

17. Dewey, John, *Lectures for the First Course in Pedagogy*, unpublished, No. 1 (1896), p. 1; quoted in Wirth, *op. cit.*, 28.

18. Dewey, John, *Plan of Organization of the University Primary School*, unpublished, University of Chicago, 1895 (?); quoted in Wirth, *op. cit.*, 88.

19. DePencier, *op. cit.*, 19-21.

the traditional role of the teacher as educator, with its replacement by the concept of the teacher as a guide in the socialization of the child, leading each youngster to *adapt* to the specific *behavior* required of him in order for him to *get along* in his group.²⁰ Here was a call for a levelling out of individual differences into a common pool of students who are the unknowing subjects of learning technicians devising the social order of the future and changing curricula and methods at will.²¹

To Dewey, as to Wundt, man was just another animal, alone with his reactions, dependent upon experiential data. According to professors Mort and Vincent of Columbia Teachers College, "John Dewey was the culminating theorist in three centuries of educational writing."²² He believed that learning only occurred through experience, that the stimulus-response mechanism was basic to learning, and that teachers were not instructors, but designers of learning experiences.²³ At the Dewey School at the University of Chicago, and later at Teachers College of Columbia University, Dewey was able to promote and implement the connection of psychology and education, and become the leading figure in American education. Yet Dewey, the "Father of American Education," was only one of the disciples of Wundtian psychology, and only one of those individuals who critically transformed American education.

The Publicist

While Hall had the distinction of being Wundt's first American student, James McKeen Cattell had the distinction of being Wundt's first

20. See, in particular, John Dewey's, *My Pedagogic Creed*, in which he states:

The school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends. Education, therefore, is a process of living and not a preparation for future living.

Quoted in Mayer, Frederick, ed., *Foundations of Contemporary Education* (New Haven: College & University Press, 1966), 139.

21. Dewey contended that the public schools must "take an active part in determining the social order of the future . . . according as the teachers align themselves with the newer forces making for social control of economic forces." Quoted in Allen, Gary, "Hands off our Children!," *American Opinion*, XVIII, No. 9 (October, 1975), 3.

22. Mort, Paul R., and William S. Vincent, *Introduction to American Education* (New York: McGraw-Hill, 1954), 43.

assistant, and perhaps the greatest publicist and promoter of the new brand of psychology as well.

Cattell was born in 1860 in Pennsylvania, and received his bachelor's degree from Lafayette College (where his father was president) in 1880. He then spent a short period of time in Germany, where he met Wundt and saw his laboratory. Returning to Germany in 1883, Cattell made his way to Leipzig and announced to Wundt that he was going to be the master's assistant. Wundt accepted and Cattell spent the next three years experimenting in Wundt's lab, receiving his Ph.D. under Wundt in 1886. Cattell's primary interests were in the areas of individual differences in ability, and mental testing.²⁴

One series of experiments Cattell performed while at Leipzig examined the manner in which a person sees the words he is reading. By testing adults who knew how to read, Cattell "discovered" that individuals can recognize words without having to sound out the letters. From this, he reasoned that words are not read by compounding the letters, but are perceived as "total word pictures." He determined that little is gained by teaching the child his sounds and letters as the first step to being able to read. Since individuals could recognize words very rapidly, the way to teach children how to read was to show them words, and tell them what the words were. The result was the dropping of the phonic or alphabetic method of teaching reading, and its replacement by the sight-reading method in use throughout America. The nationwide effects of Cattell's research and conclusions, and, later, the dissemination of those conclusions through Teachers College of Columbia University, form the basis for Rudolf Flesch's best-seller, *Why Johnny Can't Read*.²⁵

Returning to the United States with his doctorate in psychology, Cattell lectured at Bryn Mawr College and at the University of Pennsylvania for a year. In 1887 he left the country again to lecture at Cambridge, where he met and was deeply impressed by the English psychologist Galton. Galton's view was that "a man's natural abilities are derived by inheritance, under exactly the same limitations as are the form and physical features of the whole organic world."²⁶ Cattell absorbed Galton's approach to eugenics, selective breeding, and the measurement

23. *Ibid.*, 44, and Wirth, *op. cit.*, 78-80.

24. Murphy and Kovach, *op. cit.*, 169-72, and Schultz, *op. cit.*, 117-22.

25. Flesch, Rudolph, *Why Johnny Can't Read* (New York: Harper & Row, 1955). The sight-reading system promoted at Columbia Teachers College is apparently also the reason why Johnny can't spell.

26. Pintner, *op. cit.*, 14.

of intelligence differences between individuals. Cattell was later to become the American leader in psychological testing, and in 1894 would run the first battery of psychological tests ever given to a large group of people, testing the freshman and senior classes at Columbia University and thereby initiating educational testing in the United States.

Upon his return from Cambridge, Cattell became professor of psychology at the University of Pennsylvania—the first professor of the new science anywhere in the world (Wundt's title was in philosophy, not psychology). At Pennsylvania, he established one of the first psychological laboratories in the country, patterning it after Wundt's Leipzig model. Leaving Pennsylvania in 1891, Cattell joined the faculty of Columbia University as professor of psychology, later to become head of the psychology department at that university, a critical position for the union of psychology and education.

At Columbia, Cattell blossomed as an organizer and publicist. How might one promote the new "science" of experimental psychology? Cattell's answer was to create publications which would carry news about the new field of educators and scientists across the country. First he began a new journal, in 1894, called *The Psychological Review*. Then he purchased from Alexander Graham Bell the weekly publication *Science*, which later became the official journal of the American Association for the Advancement of Science. In 1900 he began *Popular Science Monthly*, continuing to publish it after 1915 as *Scientific Monthly*; that same year he began yet another publication, the weekly *School and Society*.²⁷

Cattell had stature in his profession. He had been one of the first Americans to work with Wundt, and he had brought back a doctorate from one of the great German universities. He began a series of well-known reference works: *American Men of Science*, *Leaders in Education*, and *The Directory of American Scholars*. With publications such as these, he established American psychologists within the mainstream of American education, the leaders of the new field taking their places as scientists, educators, and scholars in the pages of his reference works.

During his time at Columbia, Cattell supervised 344 successful candidates for the Ph.D. degree, more than were awarded in psychology at any other school in the United States. In 1895 he was president of the American Psychological Association, and in 1900 became the first psychologist elected to the National Academy of Sciences. Although he never wrote a textbook, and was the author of only a few papers in his

27. Schultz, *op. cit.*, 119.

field, he publicized experimental psychology broadly, and organized and promoted his colleagues and their accomplishments, enabling them to consolidate their positions in departments of philosophy, and later psychology, at major American universities across the country.²⁸ Of those colleagues, a few deserve mention, as they relate in a direct manner to the fusion of German psychology and American education that was about to occur.

One of them was James Mark Baldwin, who studied with Wundt and was to become one of the leaders of American experimental psychology as well as editor of Cattell's *Psychological Review*.²⁹ Another was Andrew C. Armstrong, professor of psychology at Wesleyan University. Building up his faculty in the new subject, Armstrong hired his own former student "the ardent young experimentalist, Charles Judd, fresh from Germany with a Leipzig doctorate from Wundt."³⁰ Judd later left Wesleyan to become instructor in psychology at New York University's School of Pedagogy, professor of psychology and pedagogy at the University of Cincinnati, director of the psychological laboratory and psychology instructor at Yale, and, in 1909, director of the School of Education at the University of Chicago.³¹

The Staging Point

James Earl Russell was another student of Wundt's, having received his doctorate from Leipzig in 1894. Russell came to Columbia University in October, 1897, only five years after the New York College for the Training of Teachers had received its permanent charter as Teachers College. From his position as head of the Department of Psychology and General Method, Russell directed the central department at Teachers College. That same year, Russell became dean of the College. He would run it for the next thirty years, building the biggest institution in the world for the training of teachers.³²

Thus, in 1897, the stage was set for the rapid expansion of German laboratory psychology in the United States. Working closely with Cattell,

28. Boring, *op. cit.*, 532-40.

29. *Ibid.*, 530-1.

30. Joncich, Geraldine, *The Sane Positivist: A Biography of Edward L. Thorndike* (Middletown: Wesleyan University Press, 1968), 73.

31. See the explicit reference in the *Encyclopaedia Britannica*, 15th ed., *Micropaedia*, Vol. V (Chicago: Encyclopaedia Britannica, 1976), 625.

32. Cremin, *et. al.*, *op. cit.*, 25-9.

Russell began to hire a faculty that could further fuse psychology and education. One of his first choices was Frank McMurtry, who had also studied psychology at Leipzig:

Active in the National Educational Association and in the National Society for the Scientific Study of Education, of which his brother Charles McMurtry was the executive secretary, he (Frank) soon attracted the attention of James Russell. The result was that in the fall of 1898 he joined the Teachers College Faculty . . . His own studies of the principles of method [of John Dewey, ed.] emerged in 1907 in his book *How to Study and Teaching How to Study*, followed by many additional treatments of the same theme. His basic interests also extended to the curriculum of the elementary school; his teaching and writing in this realm quickly established him as a pioneer of modern progressive educational theory.³³

It was the hiring by Russell of another adept, however, that was to result in Teachers College becoming the connection for the injection of a fatal dose of German psychology into the mainline of American education. Edward Lee Thorndike was trained in psychology by the first generation of Wundt's protégés. Thorndike graduated from Wesleyan University in 1895, after having studied with Wundtians Armstrong and Judd. He went to graduate school at Harvard, studying under the last great American psychologist (old definition of the word) William James. While at Harvard, he surprised James by doing research with chickens, testing their instinctive and intelligent behavior, and pioneering what later became known as "animal psychology":

As briefly stated by Thorndike himself, psychology was the science of the intellect, character, and behavior of animals, including man.³⁴

Thorndike applied for a fellowship at Columbia, was accepted by Cattell, and moved with his two most intelligent chickens to New York, where he continued his research and gained his Ph.D. in 1898.³⁵ Thorndike's specialty was the "puzzle box," into which he would put various animals (chickens, rats, cats) and let them find their way out by themselves. His doctoral dissertation on cats has become part of the classical literature of psychology.

After receiving his doctorate, he spent a year as a teacher of education at Western Reserve University, but it wasn't long before

33. *Ibid.*, 46-7.

34. *Ibid.*, 44.

35. Schultz, *op. cit.*, 165.

Cattell advised Dean Russell to visit Thorndike's first classroom at Western Reserve:

Although the Dean found him "dealing with the investigations of mice and monkeys," he came away "satisfied that he was worth trying out on humans."³⁶

Russell offered Thorndike a job at Teachers College, where the experimenter remained for the next thirty years.

Thorndike was the first psychologist to study animal behavior in an experimental psychology laboratory and, following Cattell's suggestion, he applied the same techniques to children and youths. As a result, in 1903 he published the book *Educational Psychology*, and in the following years published a total of 507 books, monographs, and articles on his field.³⁷

Animal Psychology in the Classroom

Thorndike's primary assumption was the same as Wundt's: that man is an animal, that his actions are reactions, and that he can be studied in the laboratory in much the same way as an animal might be studied, and with similar results. Thus Thorndike equated children with the rats, monkeys, fish, cats, and chickens upon which he experimented in his laboratory. When he determined something tangible or quantifiable in the laboratory about the intelligence and learning rates of animals, he was prepared to apply what he had found to learning in the classroom. He extrapolated from his research into animal behavior "laws" which he then applied to the training of teachers. These, in turn, took what they had learned to every corner of the United States and ran their classrooms, curricula, and schools on the basis of the new "educational" psychology.

Thorndike took Wundt a giant step further. In *The Principles of Teaching based on Psychology* (1906), Thorndike set out the goal of making "the study of teaching scientific and practical." This is his definition of the art of teaching:

. . . the art of giving and withholding stimuli with the result of producing or preventing certain responses. In this definition the term stimulus is used widely for any event which influences a person,—for a word spoken to him, a look, a sentence which he reads, the air he breathes, etc., etc. The term response is used for any reaction made by him,—a new thought, a feeling of interest, a bodily act, any mental or bodily condition resulting

36. Cremin, *et.al.*, *op. cit.*, 43.

37. Schultz, *loc. cit.*

from the stimulus. The aim of the teacher is to produce desirable and prevent undesirable changes in human beings by producing and preventing certain responses. The means at the disposal of the teacher are the stimuli which can be brought to bear upon the pupil,—the teacher's words, gestures, and appearance, the condition and appliances of the school room, the books to be used and objects to be seen, and so on through a long list of the things and events which the teacher can control.³⁸

Here we have Wundt again, but in the American, not the Leipzig, classroom, and teaching not the students of Kaiser Wilhelm's day, but the teachers of our children. Here we have the origins of conditioning and the tools of the behavioral psychologists, the Watsons and Skinners. Thorndike based conditioning on what he called the "law of effect," which stated that those actions and behaviors which led to satisfaction would be impressed, or stamped in, on the child, and those which led to unsatisfactory results would be stamped out. Thus the only way to strengthen a "good" response by the child is through reinforcing it, and the only way to eliminate a "bad" response from the child is through denying it.

This creates certain problems for the educator. Should the child, for example, not want to learn his multiplication, the teacher will have to find some way of making multiplication pleasurable and rewarding, or the child just won't learn it. Similarly, if the child enjoys tossing pencils at his classmates, he will have to be instructed, by denying him pleasure, that such a "behavior" isn't permissible. This thinking has, over the years, created a society which operates more on the basis of gratification than on the basis of reason or responsibility. Children expect to receive what is pleasurable, and what they desire, because they have learned in school that what is pleasurable is good, and what isn't pleasurable, isn't good. This is the heritage of the stimulus-response methodology of teaching developed in this country by E.L. Thorndike and transmitted to thousands of teachers through the medium of "educational" psychology.

What was the purpose of education, to Thorndike?

Education is interested primarily in the general interrelation of man and his environment, in all the changes which make possible a better adjustment of human nature to its surroundings.³⁹

Here we have the persistent view, as expressed by Dewey and others, that man is a social animal and must adapt himself to his environment,

38. Thorndike, Edward L., *The Principles of Teaching Based on Psychology* (New York: A.G. Seiler, 1925), 7-8. See also Thorndike, Edward L., *The Elements of Psychology*, 2nd ed. (New York: A.G. Seiler, 1915).

39. *Ibid.*, 3.

rather than enhancing the environment to suit his needs and those of society. In this meeting ground between the views of Thorndike and Dewey, individualism and the growth of individual abilities and differences makes way for a smooth transition into social conformity and adaptation. The product of education becomes, not abilities, but "well-adjusted" children.

Thorndike also had very specific views regarding education in the basics—the 3R's:

Studies of the capacities and interests of young children indicate the advisability of placing little emphasis before the age of six upon either the acquisition of those intellectual resources known as the formal tools—reading, spelling, arithmetic, writing, etc.—or upon abstract intellectual analysis.⁴⁰

Despite rapid progress in the right direction, the program of the average elementary school is too narrow and academic in character. Traditionally the elementary school has been primarily devoted to teaching the fundamental subjects, the three R's, and closely related disciplines . . . Artificial exercises, like drills on phonetics, multiplication tables, and formal writing movements, are used to a wasteful degree. Subjects such as arithmetic, language, and history include content that is intrinsically of little value. Nearly every subject is enlarged unwisely to satisfy the academic ideal of thoroughness. That the typical school overemphasizes instruction in these formal, academic skills as a means of fostering intellectual resources . . . is a justifiable criticism . . . Elimination of unessentials by scientific study, then, is one step in improving the curriculum.⁴¹

Here, Thorndike was joining and furthering the demand of psychologists that the traditional curricula be radically changed in accord with the principles of psychology. Besides de-emphasizing the study of the educational basics, he laid out what he considered to be the three main functions of the elementary school:

- (1) to provide for each child six years of experience designed to enable him to make at each step in the period adjustments to the most essential phases of life . . . To adjust this general education to each child requires a considerable degree of specialization in accordance with individual differences. Consequently the elementary school has a second function, namely (2) to determine as accurately as possible the native intellectual capacities, the physical, emotional,

40. Thorndike, Edward L., and Arthur I. Gates, *Elementary Principles of Education* (New York: Macmillan, 1929), 308.

41. *Ibid.*, 311-12.

temperamental, recreational, aesthetic, and other aptitudes of children. Since some pupils will find it necessary or advisable to enter a vocation in the middle teens, a third function is essential in some degree, namely, (3) to explore the vocational interests and aptitudes of pupils and to provide some measure of vocational adjustment for those who will leave school at the earliest legal age.⁴²

Here, too, we have a considerable change from the traditional American system of education. Let's look at each of the three main functions listed above. We have spoken about Thorndike's views on adjustment: his views are based upon education as experience, not as the development of skills that access values and individuality. The child, much like the animal, is what he has experienced, tempered by the type and condition of his brain and nervous system. If his nervous system is in good shape, then the child will be able to use and respond properly to the stimuli thrust at him. It is, of course, in the child's earliest years that the nature of the stimuli given him is most important, as they will then most influence his future character and personality. This is the introspective, mechanistic, involuted viewpoint, that children are stimulus-response animals with set levels of intelligence. They should be given the correct stimuli and experiences, reinforced through the manipulation of pleasure.

Some Just Don't Make It

Unfortunately, despite the careful control of stimuli and the conditioning of behavior, something might still go wrong. With all stimuli theoretically the same for a number of children, the continued difference in individual learning rates and abilities indicates that there must be something inherently different between youngsters. This gets us to the importance of psychological testing. To determine just what the differences are, you test each child regularly and thoroughly in order to determine specific learning disabilities or deficiencies. Thorndike's view here is based on the premise that intelligence is a set thing, and that it is set before the student enters school.⁴³ It is an easy conclusion, and it absolves educators from having to take responsibility for some of their children not learning. After all, if half the students in a classroom learn, that is proof enough that the teacher is teaching correctly. That the other half doesn't learn is obviously not the teacher's fault, as this half heard

42. *Ibid.*, 310.

43. *Ibid.*, chapters X, XIII, *passim*.

what the first half heard, and experienced the same stimuli. No, there must be something wrong with the second half, and psychological tests will determine what it is. Before 1900, the way to tell a good teacher was to see if his students, at the end of their studies, knew a subject. With the growth of student testing, however, teaching standards became nonexistent and nonquantifiable, as they depended upon variables inherent in the nervous systems of the children, and thus out of the control of the teacher.

The failure of many children to learn brings us to Thorndike's third point. Some students just won't make it, he decided, and it's better to determine through educational testing who they will be, early enough so that they can be shunted aside into useful vocational training before it's too late. Here, finally, Thorndike reflects once again a synthesis of the psychological views of Wundt and the socialist views of Dewey:

When all facts are taken into account, we believe it will be found that the best interests of the individual and society will be served by providing a certain number of the pupils least gifted in intelligence with the equipment needed to begin their vocational career by the completion of the junior high school period or even earlier in a few cases. Other individuals will advance their own welfare and that of society by securing but one more year, others by two, others by three additional years. Thus although the great majority of children should spend some time in the junior high school, not all of them should be expected to continue to the completion of the senior-high-school course. Each child should have as much high-school work as the common good requires.⁴⁴

In summary, a German psychologist was convinced that men are as animals, and that they can be understood by analyzing what they experience. His premise and methods were imported into an expanding educational system in the United States, and disseminated throughout the country to teachers, counselors, and school administrators. Within a few generations, juvenile delinquency runs rampant, illiterates pour out of the schools, teachers no longer learn how to teach, and generation after generation of adults, themselves cheated out of a good education, wonder if there is any solution to the morass of "modern" education.

Money to Burn

It took hundreds of millions of dollars to turn education around in that period of time. Where did the money that fueled this epidemic come

44. *Ibid.*, 320.

from? How was it spent? How did the mainstream of German psychology meet up with a mainstream of millions?

The answer, it must be admitted, is enough to make one feel distinctly paranoid. The new German psychology tapped the richest vein of American wealth and philanthropy, and won for itself the backing of almost unlimited funds. Here were its laboratories, its new buildings, its endowments, its publications, its research facilities, transportation, salaries—the wherewithal to spread like wildfire through American education.

The checks for this expansion were to emanate not from the uptown headquarters of Columbia Teachers College, in Morningside Heights, but from No. 26 Broadway, around the corner from the financial capitol of the world on Wall Street.

No. 26 Broadway was the most famous business address in the country, perhaps in the world. It was the home of the Standard Oil Company, owned and operated by John D. Rockefeller, Sr. The story of how the Rockefeller billions became involved in the spread of German psychology, of how the resources of the great oil monopoly came to be used in the upheaval of American education, spans a period of some 40 years, and begins with Mr. Rockefeller himself.

As every school child used to know, Rockefeller created one of the largest monopolies of his time. He began in the oil business in 1863, and by 1880 had gained control of 95% of the oil production in the nation. He controlled the drilling for oil, the transportation of crude and refined oil through an intricate tank car system, the refineries, and the prices. He sabotaged his competitors, hired spies to infiltrate the businesses of his enemies, and squeezed out independent operators by carefully conceived secret contracts. By 1910, when one could buy a glass of beer for a penny and a loaf of bread often for less than a nickel, when a three-room apartment went for \$5 a month and a good pair of shoes a dollar, Rockefeller had assets of over \$800 million (in today's buying power, that equates roughly to \$5-10 billion).⁴⁵

Rockefeller liked to make money. At age 41, he was quoted as saying, "I have ways of making money you know nothing of,"⁴⁶ and later attributed his money-making powers to a gift from God:

45. The story of John D. Rockefeller's rise to wealth is related in Rockefeller family biographer Allan Nevins' *Study in Power: John D. Rockefeller, Industrialist and Philanthropist*, 2 vols. (New York: Charles Scribner's Sons, 1953).

46. Abels, Jules, *The Rockefeller Billions: The Story of the World's Most Stupendous Fortune* (New York: Macmillan, 1965), 114-15.

I believe the power to make money is a gift from God—just as are the instincts for art, music, literature, the doctor's talent, yours—to be developed and used to the best of our ability for the good of mankind. Having been endowed with the gift I possess, I believe it is my duty to make money and still more money and to use the money I make for the good of my fellow-man according to the dictates of my conscience.⁴⁷

And make money he did, in just about any way he could, but with little regard for "conscience." He became one of the most hated men in the country:

It was more than thirty years since he had begun his career, and Rockefeller was the central figure of the most spectacular success story in business history. The Standard was indisputably the most powerful industrial organization in the nation, and the most visible symbol of growing American might abroad. But for Rockefeller personally the price had been heavy: he had become identified with all the excesses the Standard had committed in its rise to power; hatred clung to him like iron filings to a magnet . . . Rockefeller had pursued his leviathan with complete dedication. But now he found himself lashed to its back as inextricably as Ahab, and in equal danger of being taken down for good.⁴⁸

Rockefeller was excoriated by public opinion, and was the target of numerous investigating committees trying to nail him for his business activities. His fortune and holdings were growing faster than he could control them, or protect them. He needed a special assistant who could polish up his public image, and at the same time act as hatchetman in the consolidation of his far-flung business empire. He found such a man in Frederick Taylor Gates.

Rockefeller, a Baptist, had over the years given sums of money to various Baptist causes. By the late 1880s, the church elders felt bold enough to request that Rockefeller assist in the rebuilding of the University of Chicago, a Baptist school originally founded in 1856 as the Morgan Park Theological Seminary. Agreeing to their request, Rockefeller became immersed in the reconstruction of the university, giving to it in 1887 the huge sum of \$600,000. It was during his involvement with the university that he met Gates, a Baptist minister who had previously worked for George A. Pillsbury, founder of the flour fortune, in distributing Pillsbury's last philanthropies before his death.⁴⁹

47. *Ibid.*, 280.

48. Collier, Peter, and David Horowitz, *The Rockefellers: An American Dynasty* (New York: New American Library, 1976), 41.

49. *Ibid.*, 49-50.

The Mission of Fred Gates

Rockefeller was impressed by Gates, by his directness and the manner in which he handled financial affairs. Constantly besieged by requests for money, Rockefeller invited Gates to come to work for him and take the burden of philanthropy off his shoulders. Gates was soon handling all requests for Rockefeller money, and doing whatever he could to polish up the Rockefeller image. On the side, he reorganized Rockefeller's personal investments, consolidating Rockefeller's ownership over the great Mesabi ore deposits in Minnesota which provided 60% of the nation's iron ore, buying out the stockholders of personal holdings which were in trouble, and eliminating unprofitable holdings from the Rockefeller portfolio.

Gates became frantic at the extent of Rockefeller's financial holdings, and of the threat they contained for Rockefeller: "Your fortune is rolling up, rolling up like an avalanche! You must distribute it faster than it grows! If you do not, it will crush you, and your children, and your children's children."⁵⁰ As Gates later recollected:

I trembled as I witnessed the unreasoning popular resentment at Mr. Rockefeller's riches, to the mass of people, a national menace. It was not, however, the unreasoning public prejudice of his vast fortune that chiefly troubled me. Was it to be handed on to posterity as other great fortunes have been handed down by their possessors, with scandalous results to their descendants and powerful tendencies to social demoralization? I saw no other course but for Mr. Rockefeller and his son to form a series of great corporate philanthropies for forwarding civilization in all its elements in this land and all lands; philanthropies, if possible, limitless in time and amount, broad in scope, and self-perpetuating.⁵¹

If large philanthropy was to be the solution, then there was only one way, in the view of the great monopolist Rockefeller, to go about the business which he called "the difficult art of giving":

If a combination to do business is effective in saving waste and in getting better results, why is not combination far more important in philanthropic work?⁵²

50. *Ibid.*, 59.

51. *Ibid.*

52. Rockefeller, John D., *Random Reminiscences of Men and Events* (Toronto: McClelland & Goodchild, 1909), 165.

The game plan was simple. Here was all this Rockefeller money lying about, and here was Mr. Rockefeller being constantly badgered, scrutinized, and hauled into court. The solution was to set up a monopoly on philanthropy, funnel into it large sums of money from the fortunes of Rockefeller and other industrial barons, and disburse the money in a way guaranteed to ensure Mr. Rockefeller the respect and admiration of those elements of society which had most castigated him. In other words, it was time to make the money clean.

The creation and funding of the University of Chicago had done much to establish Rockefeller's public relations profile among Baptists and many educators. Educational philanthropy, since it was paying off in good publicity, might be the way to go. The only difficulty was that education, on the whole, wasn't in bad shape. The indigenous American educational system was rooted deeply in the beliefs and practices of the Puritan Fathers, the Quakers, the early American patriots and philosophers. Jefferson had maintained that in order to preserve liberty in the new nation, it was essential that its citizenry be educated, whatever their income. Throughout the country, schools were established almost immediately after the colonization of new areas. Fine school systems were established by the Quakers in Pennsylvania and the Midwest. The free school movement in New York, under the aegis of DeWitt Clinton and Horace Mann, was flourishing. A large number of "normal schools" (so-called due to their role in setting the norms and standards of education) turned out thousands of trained teachers each year. Major universities had been established early in the country's history, and yearly graduated intensely literate and well-educated individuals who were to be the leaders of our nation.⁵³

As for educational results, they far exceeded those of modern schools. One has only to read old debates in the *Congressional Record* or scan the books published in the 1800's to realize that our ancestors commanded a use of the English language superior to our own. Students learned how to read not comic books, but the essays of Burke, Webster,

53. For an excellent description of education in New York at the turn of the century, see Palmer, A. Emerson, *The New York Public School: Being a History of Free Education in the City of New York* (New York: Macmillan, 1905). Sources of information about education in this country before the growth of psychology are scarce; much, however, was written critically about education after the establishment of Columbia Teachers College, for example: Butler, Nicholas Murray, *Education in the United States, A Series of Monographs* (New York: American Book Company, 1910), which nonetheless is a rich source of statistics relating to American education. For an overview of the philosophical background to American education, see Vassar, Rena L., ed., *Social History of American Education*, 2 vols. (Chicago: Rand McNally & Co., 1965).

Lincoln, Horace, Cicero. Their difficulties with grammar were handled long before they graduated from school, and any review of a typical elementary school arithmetic textbook printed before 1910 dramatically shows that students were learning mathematical skills that few of our present-day high school graduates know anything about. The high school graduate of 1900 was an educated person, fluent in his language, his history, and his culture, with the skills he needed in order to succeed in life.

Except in the rural South.

The Education Trust

The South had been torn by the Civil War, and was undergoing a period of reconstruction which broadly shifted traditional values and institutions. Few schools existed in rural areas, even for the white children, much less for the children of parents recently freed from slavery. It was here, in the rural South, that Gates found a vehicle for the implementation of his plans.

Some work had already been done in the reconstruction and development of the rural Southern educational system. The Peabody and Slater Funds had long been active in funding Negro schools, and the Tuskegee and Hampton Institutes were offering Negro children the benefits of industrial education, suitable for their future jobs in industry and agriculture. One of the leaders in Southern education was Robert C. Ogden, a Northern businessman who had assisted in the creation of Hampton Institute. Concerned about the condition of rural education in the South, he began a series of yearly conferences about education, and in 1901 hired a special train to take 50 prominent men and women on a grand tour of the schools of the South.⁵⁴

John D. Rockefeller, Jr., went along. On his return, Junior excitedly met with Gates to propose that his father's philanthropy be directed toward Southern education. To Junior, who had only been at No. 26 Broadway for four years, this was a mission worthy of his abilities. He discussed the idea with his father, and with Dr. Wallace Buttrick, secretary of the Baptist Home Mission Society, and a man who would wield considerable influence in education in the coming years. Junior, himself, played a central role in the Gates-Rockefeller connection. As he put it:

54. See Raymond B. Fosdick's memorial history of the General Education Board and Rockefeller philanthropy in education, *Adventure in Giving: The Story of the General Education Board, A Foundation Established by John D. Rockefeller* (New York: Harper & Row, 1962), *passim*.

Gates was the brilliant dreamer and creator. I was the salesman—the go-between with father at the opportune moment. Gates and I were father's lieutenants, each of us with a different task, but acting in perfect harmony. Gates did the heavy thinking, and my part was to sell his ideas to father. Of course, I was in a unique position. I could talk with father at the strategic moment. It might be in a relaxed mood after dinner, or while we were driving together. Consequently I could often get his approval of ideas which others couldn't have secured because the moment wasn't right.⁵⁵

The young Rockefeller was captivated by the idea of establishing a Negro Education Board. After preliminary discussions, however, he decided that it wouldn't go over to limit the educational philanthropy program to just one race. Thus at a dinner party on January 15, 1902, Junior laid out his plans to an assembled group of noted Southern educators, and received an enthusiastic response. A month later, the same group assembled again, this time to charter the new organization, which was called the General Education Board and whose purpose was "the promotion of education within the United States without distinction of race, sex or creed."⁵⁶ It was to be a philanthropic monopoly. In the words of Gates:

The object of this Association is to provide a vehicle through which capitalists of the North who sincerely desire to assist in the great work of Southern education may act with assurance that their money will be wisely used.⁵⁷

The new organization quickly absorbed the major existing philanthropic groups working in the South—the Slater and Peabody Funds—after being kicked off by Mr. Rockefeller, Sr., with an initial donation of over \$1 million. The General Education Board was on its way. Where was it going? Initially, it assisted Robert Ogden's Southern Education Board, which had been established several years earlier. Then it broadened its horizons to include other aspects and areas of education which were viewed as deficient in some way. The founding viewpoint of the General Education Board was perhaps best expressed in the Board's *Occasional Letter No. 1*, written by Gates:

In our dreams, we have limitless resources and the people yield themselves with perfect docility to our molding hands. The present education conventions fade from their minds, and

55. *Ibid.*, 6.

56. *Ibid.*, 8.

57. *Ibid.*, 9.

unhampered by tradition, we work our own good will upon a grateful and responsive rural folk. We shall not try to make these people or any of their children into philosophers or men of learning, or men of science. We have not to raise up from among them authors, editors, poets or men of letters. We shall not search for embryo great artists, painters, musicians nor lawyers, doctors, preachers, politicians, statesmen, of whom we have an ample supply.

The task we set before ourselves is very simple as well as a very beautiful one, to train these people as we find them to a perfectly ideal life just where they are. So we will organize our children and teach them to do in a perfect way the things their fathers and mothers are doing in an imperfect way, in the homes, in the shops and on the farm.⁵⁸

Another, similar view of the power of philanthropy was expressed by Board trustee Walter Hines Page to the first executive secretary of the Board, Wallace Buttrick:

... the world lies before us. It'll not be the same world when we get done with it that it was before: bet your last penny on that will you!⁵⁹

John D. Rockefeller, Sr.'s attention, however, was not on grandly paternalistic schemes of social revolution. The famous serialization had begun in *McClure's Magazine* of Ida Tarbell's muckraking book, *The History of the Standard Oil Company*. He was being hounded continually, his mail filled each day with hundreds of letters demanding or pleading for money, the newspapers and magazines constantly attacking him and his organization.

Under the accumulating pressures, the body that he had pushed so remorselessly for the past forty years finally rebelled. Letters between Rockefeller and his wife during this period tell of sleepless nights. He began to suffer from serious digestive disorders, and his doctor insisted that he retreat from his cares ... almost overnight the people who visited Rockefeller came away shocked by his stooped and careworn demeanor ... His face had become deeply lined; he had put on weight, sagging at the midsection. He was

58. Quoted in Goy, Michael J., *The Missing Dimension in World Affairs* (S. Pasadena: Emissary, 1976), 77-78. Gates also had strong views about fund-raising. Once, when asked about the feasibility of getting repeated donations from alumni he advised that people, having given once, were "more likely to give again when they could afford to. 'People bleed more easily after a vein has been opened,' he remarked." (According to Fosdick, *op. cit.*, 135.)

59. Fosdick, *op. cit.*, 12.

ravaged by a nervous disease ... which left him without any hair on his body, and in the first noticeable vanity of an otherwise spartan life, he began to worry about his baldness, hiding it first with a grotesque black skullcap and later with a series of ill-fitting white wigs, each of them a slightly different length so that he could imitate a natural growth of hair over a two-week period.⁶⁰

Rockefeller's greatest desire at this time was to buffer himself against his enemies and against public opinion by pouring millions into whatever medical or educational charities Gates could come up with. He had enthroned Gates as his financial overseer and the director of his fortunes, and had increasingly turned over the job of white-washing his wealth to his son, John D. Rockefeller, Jr., who over the years would seek out larger, more costly, and more spectacular ways of spending the Rockefeller fortune on visible public works. These men, it can safely be said, knew little or nothing of Wilhelm Wundt and German psychology. They conspired not to sabotage American education but to salvage the Rockefeller name, and to buttress the Rockefeller fortune against all attacks. Nonetheless, with the General Education Board, Rockefeller's "education trust," a virtually unlimited source of funds was to be made available to the design of Wundtian psychologists on American education.

Nexus

The first contact between the two forces occurred during the height of anti-Rockefeller publicity in 1902:

Hardly had Dr. Buttrick opened his two-room office on Nassau Street in 1902 when a request came from Dr. James E. Russell, dean of Columbia University's Teachers College, and there was a note of urgency about it. The morning's mail had already brought in two letters from the South, Russell explained, and each day would bring in more—all from teachers seeking scholarship aid so that they might come North to complete their professional training ... The General Education Board acted promptly, and within a few weeks scholarships of \$300 each had been awarded to six normal school teachers in the South.⁶¹

The innocent precedent was set, and the game was on. Teachers College needed money in order to accommodate its growing enrollment, expand its curriculum, and "influence American education, in accord

60. Collier and Horowitz, *op. cit.*, 45.

61. Fosdick, *op. cit.*, 298-99.

with and even beyond its ambitions."⁶² Dean Russell was to find his stable base of funding in the Rockefeller fortune, as expressed in this letter from John, Jr., to Russell in late 1902:

As a thank offering to Almighty God for the preservation of his family and household on the occasion of the destruction by fire of his country home at Pocantico Hills, New York, on the night of Sept. 17, 1902, my Father makes the following pledge:

Understanding that the total indebtedness of Teachers College at the present time amounts to \$200,000 in round numbers, which same was incurred partly because of a deficit in last year's running expenses, and partly by reason of certain necessary repairs and alterations; as soon as he shall receive satisfactory evidence that this entire indebtedness had been wiped out my Father will contribute two hundred and fifty thousand dollars (\$250,000) as an endowment for the College.

Furthermore, during a period of two years from that date, my Father will duplicate, dollar for dollar, all contributions in cash made by others toward endowment, up to a total from him of two hundred and fifty thousand dollars (\$250,000) . . .⁶³

As a result, Teachers College experienced a "meteoric rise":

Only fifteen years after the move to 120th Street, Teachers College will meet the Rockefeller endowment terms and cover an entire city block crammed with seven buildings. Its facilities will operate from early morning to ten o'clock in the evening, for ten months of the year . . . Its enrollment is to be exceeded in size by only ten universities in the entire United States; only Columbia, Harvard, and Chicago will have more students seeking advanced education in 1912 as, amazingly, Teachers College becomes the fourth largest graduate school in the nation.⁶⁴

Thus Teachers College was able to expand at a time critical to its success, hard on the heels of a massive population increase among school-age children. The number of public school enrollments was one reflection of this increase, rising from 9,900,000 in 1880 to 12,700,000 only ten years later, and continuing to rise rapidly. The number of colleges increased from 350 in 1880 to nearly 500 in 1900, with college enrollment doubling over the same period, and continuing to expand into

62. Joncich, *op. cit.*, 189.

63. *Ibid.*, 189-90.

64. *Ibid.*, 190.

the early years of the new century.⁶⁵ There was an urgent need for teachers, and Teachers College was now firmly established and ready to fill that need with something other schools of education didn't have—a methodology called "educational" psychology.

The year after Rockefeller's General Education Board had set Teachers College financially on its feet, Thorndike published the first volume of his masterwork, *Educational Psychology*. In 1904, he was entrenched as full professor and head of the new Department of Educational Psychology at Teachers College. That same year, after ten years at Chicago doing experimentation with children, John Dewey joined the faculty of Columbia University as a member of the departments of philosophy and education, in a unique position to influence advanced students in Teachers College.⁶⁶ With Russell, Cattell, Thorndike, and the other Wundtians, Dewey set the ball rolling for a major new movement in American education. An amalgam of "educational" psychology and socialism, it became known as "Progressive Education" and, emanating from Teachers College of Columbia University for the next half-century, it was a commonplace in every school in the country by the 1950's.

The Godfather

To Dewey and Thorndike, the schoolroom was a "great laboratory" in which to do their research and investigate "the modification of instincts and capabilities into habits and powers."⁶⁷ Yet there was no large laboratory school at Columbia, no institution filled with students who could be willing or unknowing subjects in the great psychological experiments of the Wundtians at Teachers College. Not until 1917, that is, when an offer for such a laboratory school came from Abraham Flexner of the General Education Board. Who was Flexner?

Abraham Flexner was an able fund-raiser, an experienced educator, and an organizer who felt he had the solution both to conceived wrongnesses in American education and to the need of the General Education Board to disburse the Rockefeller millions.⁶⁸ Educated at Johns Hopkins University and the University of Berlin, he apparently had little contact

65. Cremin, *et.al.*, *op. cit.*, 6.

66. *Ibid.*, 45-6.

67. *Ibid.*, 44.

68. Flexner's very readable autobiography, *I Remember*, he later brought up to date and reprinted under the title *Abraham Flexner: An Autobiography* (New York: Simon and Schuster, 1960).

with the Wundtian psychologists at each institution. Flexner's experience in education came from fifteen years of running his own preparatory school in Louisville, Kentucky, and from the studies in German and American education which he did while a researcher at The Carnegie Foundation for the Advancement of Teaching, in New York City. In 1913, Flexner left the Carnegie Foundation and went to work for the General Education Board, first as assistant secretary, then as secretary four years later, running the operations of the Board for the next eight years in partnership with its president, Wallace Buttrick.

The resident intellectual and educator on the Board, Flexner's forte was in digesting large amounts of information and making them palatable to others: his specialty was education. While Rockefeller and his son wanted only the relative peace and tranquility of millions in the bank, divorced from the manner in which those millions had been gained and safe from governmental and public attacks, Flexner saw more clearly than any other how that money could be used to further Progressive Education in the United States.

Flexner's impact on American education first took the form of "Germanizing" American medical education. While at the Carnegie Foundation, Flexner was asked to do a major study of medical schools in the United States and Canada. In the next eighteen months, Flexner visited each of the 155 medical colleges then in existence in the U.S. and Canada. Flexner was appalled by conditions which he considered to be inexcusable in comparison with the medical schools he had seen in Germany. Nonetheless, he did find several medical schools of which he approved, most notably his alma mater, Johns Hopkins, which he considered to be "the one bright spot, despite meager endowment and missing clinics."⁶⁹

Support for the "modernization" of American medical colleges rapidly developed in the General Education Board, which was looking for ways to expand its philanthropy beyond the narrow band of assistance to rural Southern education. Carnegie, who had fostered the study initially, would have nothing to do with medical funding, as "the practical Scot could see no point in helping institutions which had allowed themselves to get into so abysmal a situation."⁷⁰ But at the request of the Carnegie Foundation, Flexner took off again, this time to survey medical schools in England, Scotland, France, Germany, and Austria. It was while he was writing up his final report that Gates invited him to have lunch with him.

69. Fosdick, *op. cit.*, 152.

70. *Ibid.*, 153.

Gates was strongly interested in German medicine, and opposed to the traditional homeopathic medicine used by Rockefeller's personal physician, Dr. H.F. Bigger, with whom he often had heated arguments. In the short meeting, Gates asked Flexner what he would do if he had \$1 million to work with in developing medical education in the United States. Flexner replied that he would give it to Johns Hopkins. Gates sent Flexner off to his alma mater with the statement that if Flexner could make a convincing case for the donation, it would be given by the Board. It was several years later when Flexner finally cashed in, by securing a \$1.5 million donation from the Board to the German-oriented Johns Hopkins University. That same year, he left Carnegie and joined the Board, continuing to direct the allocation of Rockefeller millions to the development of German chemically oriented medicine in the United States.⁷¹

By the time Flexner joined the Board, his attack on American medical education, which had been front-page news across the country, had resulted in the number of medical schools in the United States dropping from 147 to 95.⁷² Naturopathic medicine was on the decline in this country, as it was proving particularly unsusceptible to Rockefeller funding. Over the years (until 1960), the General Education Board would give a total of over \$96 million⁷³ to further medical schools which, like Johns Hopkins, disregarded naturopathy, homeopathy, and chiropractic in favor of branches of medicine based almost solely on the use of chemical drugs. The Board's sponsorship of chemical medicine on the one hand and psychology on the other would culminate in 1963 when a group of researchers at Johns Hopkins developed the use of amphetamines such as Dexedrine and Ritalin to "treat" children who were regarded as "troubled" or too active. The effects of this combination of German medicine and Wundtian psychology upon American education are thoroughly documented in the best-seller, *The Myth of the Hyperactive Child, and Other Means of Child Control*, by Divoky and Schrag.⁷⁴

Flexner's second major contribution to the transformation of American education and society came in 1916, with his plan to create an

71. The disparity between Rockefeller's funding of German medicine, and his own personal disdain for it, is ably described in Collier and Horowitz, *op. cit.*, 59-61. See also Abels, *op. cit.*, chapters 28-30, *passim*.

72. Fosdick, *loc. cit.*

73. *Ibid.*, 328.

74. Schrag, Peter, and Diane Divoky, *The Myth of the Hyperactive Child & Other Means of Child Control* (New York: Random House, 1975).

experimental laboratory school, backed by Rockefeller money, which would be a showplace for the Progressive Education practices of Dewey and Thorndike. Flexner presented his views to the public in a short tract which he called "A Modern School."⁷⁵ In it, Flexner attacked American education and proposed a sharp break with workable educational practices. His experimental school would eliminate the study of Latin and Greek. Literature and history would not be completely abolished, but new methods would be instituted for teaching these subjects. Formal English grammar would be dropped, and classical literature ignored.

Radical and Dangerous

Flexner's proposals were hardly as radical as those being promoted by Dewey and other psychologists working in education, but Flexner's booklet, presented to the public as a General Education Board paper with the full weight of the Rockefeller millions behind it, produced an instantaneous and dramatic reaction across the nation. At a time when German U-boats were stalking English shipping in the North Atlantic preparatory to the outbreak of World War I, and the newspapers were full of European news, *The New York Times* devoted a major editorial to Flexner's proposal, terming it "radical and dangerous," and "subversive of a very great part of what we hold to be sound and worthy in our present system of training":

Unblushing materialism finds its crowning triumph in the theory of the modern school. In the whole plan there is not a spiritual thought, not an idea that rises above the need of finding money for the pocket and food for the belly . . . It is a matter of instant inquiry, for very sober consideration, whether the General Education Board, indeed, may not with the immense funds at its disposal be able to shape to its will practically all the institutions in which the youth of the country are trained.

If this experiment bears the expected fruit we shall see imposed upon the country a system of education born of the theories of one or two men, and replacing a system which has been the natural outgrowth of the American character and the needs of the American people . . . The plans of the General Education Board call for careful examination.⁷⁶

The dam broke open into a national outcry against the General Education Board and its covert, and often overt, attempts to control and

75. Flexner, Abraham, "A Modern School," *Occasional Papers*, No. 3 (New York: The General Education Board, 1916).

76. *The New York Times*, January 21, 1917, Section 7 & 8, page 2.

alter American education. From the *New York Journal of Commerce*:

Instances can be given in abundance where the mere prospect of an immense gift has changed the whole current of a college administrator's thought and made him trim his sails on an entirely new tack to catch the favoring breezes of prosperity.⁷⁷

From the *Manufacturers' Record*, Baltimore, Maryland:

Control, through possession of the millions massed in the Educational Trust, of two or three or four times as many millions of dollars in education makes possible control of the machinery and the methods of education. It makes it possible for the central controlling body to determine the whole character of American education, the textbooks to be used, the aims to be emphasized. Operating through State, denominational, and individual systems of schools and colleges, it gives the financial controller power to impose upon its beneficiaries its own views, good or bad, and thereby to denominate public opinion in social, economic, and political matters.⁷⁸

From the *New Orleans Times-Democrat*:

The case is here plainly stated. The fund which the General Education Board administers is largely provided by men whose interest in shaping public opinion upon certain matters of vital concern to society and to the State is very great. Whether their philanthropy serves as a cloak to attain the ends desired, or whether the plan is unselfishly conceived and the sinister influence unconsciously exerted, the effect is likely to be the same in the end.

The gifts are hedged about by restrictions and conditions, with the education board to name them and to see that they are complied with. Every college which shares in the largess poses as a supplicant, in a sense. Not only is its policy partially directed by the Board, but it is additionally influenced, wittingly or unwittingly, by the desires of its benefactors.⁷⁹

The debate continued onto the floor of the United States Senate, with Senator Chamberlain of Oregon leading the attack on the General Education Board, and making known the views of numerous well-known American educators, among them Bishop Warren A. Candler, the Chancellor of Emory University in Atlanta, Georgia:

With this financial power in its control, the general board is in position to do what no body in this country can at present

77. *Congressional Record (Senate)*, February 8, 1917, 2834.

78. *Ibid.*

79. *Ibid.*

even attempt. It can determine largely what institutions shall grow, and in some measure what shall stand still or decay. It can look over the territory of the Nation, note the places where there is a famine of learning, and start new educational plants of any species it chooses, or revive old ones. It can do in many ways what the Government does for education in France and Germany. Its power will be enormous; it seems as if it might be able to determine the character of American education. The funds it holds represent only a fraction of the amounts which it will control; by giving a sum to an institution on condition that the institution raise an equal or greater amount, it will be able to direct much larger amounts than it possesses.

As a mechanism for controlling academic opinion there has, perhaps, never been anything in the history of education that would compare with the board system of subsidizing learning . . .

. . . we owe something to our ancestors, who founded and maintained our older institutions of learning. We have no right to bind up the offerings which they laid upon the altar of higher education in the enslaving conditions prescribed by the Rockefeller board for institutions to which it grants its humiliating doles.⁸⁰

The Lincoln School

The specific point in question had been the "modern school" proposed by Flexner, but the debate had deepened into what was to be the last major American attack on Progressive Education. After 1917, Progressive Education won the day, however, and the takeover was rapid and thorough.

Even before the noise began to die down, Flexner and Teachers College went ahead with their plans for a laboratory school. Flexner had wanted to name the new school "The Modern School" (from the title of his booklet), but the phrase was so disliked that he decided to name it the Lincoln School.⁸¹ The General Education Board, following Flexner's urgings, agreed to supply all the necessary funds for the establishment and operation of the Lincoln School, and even to pay the salary of a director.

The school was established at a temporary location in midtown Manhattan, but in 1920 the Board purchased a site close to Teachers

College, and invested approximately \$1.25 million in building and furnishing the new school.

After the Lincoln School had moved to its new building, Teachers College and the General Education Board had discussions about what was called "permanent financing." After formal requests for endowment from Dean Russell . . . the General Education Board granted to Teachers College \$500,000 in 1926, \$500,000 in 1927, and \$2,000,000 in 1928.⁸²

The two forces, German psychology and Rockefeller money, had sturdily combined in an institution whose goal "was the construction of new curricula and the development of new methods."⁸³ New textbooks were created. Standard teaching practices were revised, and a course of study organized on the principles developed at Teachers College by Thorndike and Dewey. Here was the full-fledged prototype.

More than a thousand educators visited the Lincoln School in the school year 1923-1924 alone. John D. Rockefeller, Jr., even sent four of his five sons to study at the Lincoln School, with results that could have been predicted had he read the works of Thorndike and Dewey:

. . . Laurance (Rockefeller) gives startling confirmation as to "Why Johnnie Can't Read." He says that the Lincoln School did not teach him to read and write as he wishes he now could. Nelson, today, admits that reading for him is a "slow and tortuous process" that he does not enjoy doing but compels himself to do. This is significant evidence in the debate that has raged about modern educational techniques.⁸⁴

As an experiment in education, the Lincoln School proved a disappointment, and it did poorly financially despite continued Rockefeller support to the tune of \$5 million.⁸⁵ Finally closed down by Teachers College in 1946, it was replaced by the Institute of School Experimentation, which carried on the task of remodeling American education:

The judgment of the Trustees and administration in 1946 that the Institute of School Experimentation would prove to be a most effective instrument for experimenting in the public schools has been amply justified by the Institute's record. Closing the School and using the endowment's funds for the Institute has had the effect of increasing the number of the

80. *Ibid.*, 2831-32.

81. For a discussion of the Lincoln School within the context of foundation funding of Progressive Education, see Wormser, Rene A., *Foundations: Their Power and Influence* (New York: Devin-Adair, 1958), specifically Chapter 5, "Foundations and Radicalism in Education," *passim*.

82. Cremin, *et.al.*, *op. cit.*, 230.

83. Fosdick, *op. cit.*, 219.

84. Abels, *op. cit.*, 343.

85. *Ibid.*, 334.

College's educational laboratories. Where once Teachers College had laboratory schools only on Morningside Heights, it now had them all over the nation, and they are public schools with typical public school populations.⁸⁶

The Final Solution

The Lincoln School, despite its inability to teach its students how to read and write, created broad effects on American education. Discarding the traditional course of study, it developed the core curriculum and merged the study of history, geography, and civics into what it called the "social studies." To a generation of teachers and administrators who were educated at Teachers College, the Lincoln School was a model for the type of school they were being taught to create back home. To thousands of visitors, it was a showplace of German psychology and Progressive Education. For the Rockefeller forces, it was a demonstration to all of the altruistic intentions behind the Rockefeller fortune. Yet it was not, however large, the sum of all Progressive Education activities at Teachers College. Nor did it represent the thousands of ways in which an affluent Teachers College was forwarding the steady overhaul of American education. There is little in the way of change in our educational system, and our society, that the professors at Teachers College didn't have their hands into. Dewey's disciples Rugg, Counts, and Kilpatrick are good examples of where German psychology was taking the teachers of our teachers.

In the words of Rugg:

... through the schools of the world we shall disseminate a new conception of government—one that will embrace all of the collective activities of men; one that will postulate the need for scientific control and operation of economic activities in the interests of all people.⁸⁷

Rugg proposed that this could be accomplished in three ways:

First and foremost, the development of a new philosophy of life and education which will be fully appropriate to the new social order; *Second*, the building of an adequate plan for the production of a new race of educational workers; *Third*, the making of new activities and materials for the curriculum.⁸⁸

86. Cremin, *et al.*, *op. cit.*, 238.

87. Stormer, John A., *None Dare Call It Treason* (Florissant, Mo.: Liberty Bell Press, 1964), 105.

88. *Ibid.*

Counts went further, by proposing that the schools themselves build that new social order:

Historic capitalism, with its deification of the principle of selfishness, its reliance upon the forces of competition, its placing of property above human rights, and its exaltation of the profit motive, will either have to be displaced altogether, or so radically changed in form and spirit that its identity will be completely lost . . . That the teachers should deliberately reach for power and then make the most of their conquest is my firm conviction. To the extent that they are permitted to fashion the curriculum and procedures of the school they will definitely and positively influence the social attitudes, ideals and behavior of the coming generation.⁸⁹

Although Kilpatrick's views were similar, he is mentioned here not because of his furtherance of Marxism or psychology in education, but because in 1914 he published a vitriolic attack on the methods of Italian educator Maria Montessori. He argued that Dr. Montessori's "emphasis on individuality precluded the social interaction stressed in American progressive theories":

He complained further that the teaching materials were not stimulating; that children learned to read, write and figure too early; and that any good elements in the method were already contained in Dr. Dewey's theories, which went beyond those of Dr. Montessori. Dr. Kilpatrick's book had such impact that by 1918 the Montessori method was seldom mentioned in the United States, although it flourished elsewhere.⁹⁰

The result of Kilpatrick's diatribe was the suppression of the Montessori method in American education for the next 50 years. Meanwhile, Thorndike was arranging for the publication of new spellers, arithmetic books, dictionaries (in collaboration with Barnhart), textbooks on education and educational testing, and the like. And the General Education Board continued to fund Teachers College, the Progressive Education Association, the National Education Association, and their like, to the tune of hundreds of millions of dollars.⁹¹

By 1953, Wundtian psychology had reached out from Teachers College into every school in the land:

89. *Ibid.*, 102-4. See also Counts, George S., *Dare the School Build a New Social Order?* (New York: John Day Co., 1932).

90. Calkins, Carroll C., *The Story of America* (Pleasantville, N.Y.: Readers' Digest, 1975), 134.

91. Fosdick, *op. cit.*, 250-1.

The single most powerful educational force in the world is at 120th Street and Broadway in New York City. Your children's teachers go there for advanced training . . . With 100,000 alumni, TC has managed to seat about one-third of the presidents and deans now [1953] in office at accredited U.S. teacher training schools. Its graduates make up about 20 percent of all our public school teachers. Over a fourth of the superintendents of schools in the 168 U.S. cities with at least 50,000 population are TC-trained.⁹²

Today, Wundt has been all but forgotten. Gates, Flexner, Cattell, Russell, even Thorndike, are but names in old texts written by their disciples. They are seemingly irrelevant to today's critical educational problems: drug abuse, illiteracy, criminality, lowered standards, lack of motivation and self-discipline, and all the rest. Pick up a first-year college psychology text and you'll probably find no mention of Wundt, or even Cattell. Try to find a dictionary published after 1920 which has a correct definition of "psychology." Question those who went to school before 1917, and find out what it was like. Check out the early works and histories of psychology; verify the facts, the names, dates, locations and events. Looking further you will find that despite the increasing billions that the Rockefeller Foundation, other large foundations, and, now, the federal government, pour into American education, the situation just keeps getting worse. Despite the millions spent every year on the apparent development of psychology, this field has yet to come up with one workable solution to the problems of education, many, if not most of which, it appears to have created. It is time for the two to go their separate ways.

Epitaph

On August 31, 1920, Wilhelm Wundt died in Grossbathen, near Leipzig, Saxony. John D. Rockefeller, Sr., died in 1937. In 1944, James McKeen Cattell died in Lancaster, Pennsylvania. 1949 saw the death of Edward Lee Thorndike; Dewey died in 1952. In 1959, Abraham Flexner died in Falls Church, Virginia, having founded and operated the Institute for Advanced Studies at Princeton University, home of the atom bomb.

The General Education Board was merged into the Rockefeller Foundation, after John D., Jr.'s death in 1960, and no longer exists as a separate entity.

The End

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92. Cremin, *et.al.*, *op. cit.*, 269.